I. Purpose And Need

A. Introduction

Interstate 95 (I-95) is the primary north and south highway for the eastern seaboard of the United States, from Florida in the south to the U.S. border with Canada in Houlton, Maine. In Maine, I-95 is the predominant interstate highway connecting three of the state's largest cities: Portland, Augusta (the state capitol), and Bangor (Figure I-1). Bangor, Maine's third largest city, is the retail, medical, professional, and banking center for much of central, eastern, and northern Maine.

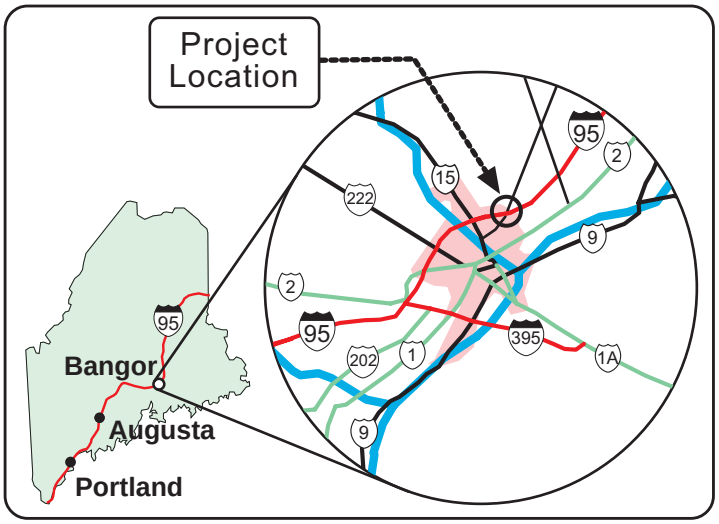


Figure I-1, Regional location map

I-95 was constructed in the Bangor area in the early 1960s (Figure I-2). Prior to construction, land northwest of the interstate was predominantly rural farmland or undeveloped; Hogan Road and Stillwater Avenue were both rural, two-lane roads. A simple diamond interchange was constructed at Hogan Road to provide a connection to U.S. Route 2 (State Street), which at that time was the only major north-south route serving the communities along the west side of the Penobscot River.

The area surrounding the Hogan Road interchange has since developed into a major regional retail and commercial center anchored by the Bangor Mall that was built in 1977. Since the mall was built, the total floor area of non-residential development has grown from approximately 36,800m^2 (400,000 ft^2) to the present 185,800m^2 (2.0 million ft^2), and additional development is planned. Numerous commercial, retail, and service-related businesses now occupy the once-rural land

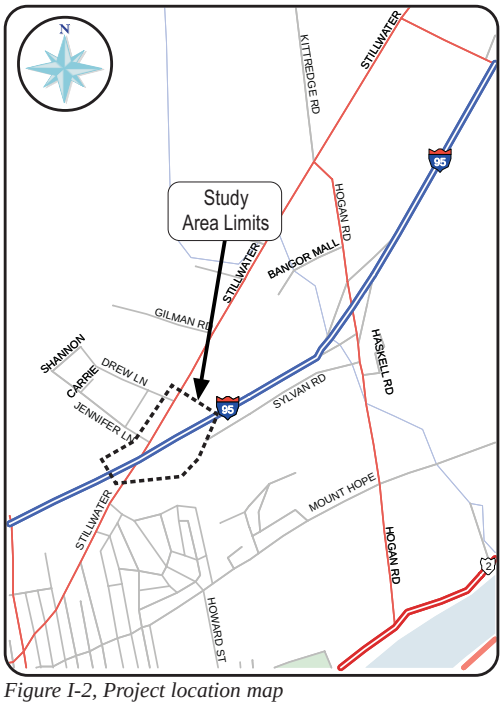


Figure I-2, Project location map

near the Hogan Road interchange. These businesses serve patrons not only from central, northern and eastern Maine, but also from the Canadian Maritime provinces and eastern Quebec.

Most local, and almost all non-local, traffic uses Hogan Road to access the stores, restaurants, hotels and other establishments in the Bangor Mall area. Consequently, the amount of traffic associated with the mall area has exceeded the acceptable level of service of the Hogan Road interchange. In response, a series of improvements have been made to the interchange and nearby intersections (Table I-1). Despite these improvements, the interchange area remains congested during peak travel demand periods and especially during the busy holiday shopping season.

Table I-1, Past Roadway Improvements

Year	Description of Improvement
1982	Construction of: a third lane on Stillwater Ave. from I-95 to Hogan Road, and a northbound right turn lane from Stillwater Ave. onto Hogan Rd.
1983	Widening of the Hogan Road bridge (which crosses Interstate 95) from two to four lanes; widening the I-95 northbound off ramp at Hogan Road from one to two lanes.
1985	Installation of traffic signals at the intersection of Hogan Road and Mt. Hope Avenue; widening of the approaches to the intersection to provide exclusive turn lanes.
1990	Widening Hogan Road, from Interstate 95 to Mt. Hope Avenue from two to four lanes.
1992	The intersections of Hogan Road with Stillwater Avenue, Bangor Mall Boulevard, and Long Meadow Drive were widened to provide additional left and right turn lanes. Installation of traffic signals at the intersection of Hogan Road, Stillwater Avenue, and Kitteridge Road. Traffic signals were installed at the intersection of Stillwater Avenue at the Bangor Mall south access drive. The median strip on the Hogan Road bridge over Interstate 95 was removed to provide additional turning lanes at the intersections at either end of the bridge. Traffic signals were installed at the intersection of Hogan Road and Haskell Road. This project also included the widening of Hogan Road to provide additional turning lanes.

B. Purpose and Need Statement

The purpose of the proposed project is to improve traffic flow and reduce congestion at the I-95/ Hogan Road interchange area for present and projected vehicle traffic volumes.

The need for the project is based on traffic congestion at three key intersections, through which all traffic between I-95 and the mall area must travel:

Photo I-1, The intersection of Hogan Rd. with Springer Dr. & Bangor Mall Boulevard (facing north on Hogan Rd.).

1) Hogan Road and Bangor Mall Boulevard / Springer Drive (Photo I-1).
2) Hogan Road and the I-95 southbound ramp (Photo I-2).
3) Hogan Road and the I-95 northbound ramps (Photo I-3).

Photo I-2, View of Hogan Rd. and the I-95 southbound on and off ramps (facing south on Hogan Rd.).

Photo I-3, View of Hogan Rd. and the I-95 northbound off ramps (facing south on Hogan Rd.).

The volume and quality of traffic flow for each movement in the three intersections was examined under existing and projected future conditions (Figure I-3). Data prepared by the Maine Department of Transportation (MDOT) for existing and projected future no-build conditions indicate that traffic volumes will increase at each of the three critical intersections.

Typically, increases in traffic volume lead to decreases in traffic flow quality. The quality of traffic flow for intersections with signal control is defined by the average stopped delay per vehicle approaching the intersection, and is expressed as a "Level of Service" (LOS) designation. LOS designations range from "A," that provides free flow and no traffic delays, to "F," that consists of vehicle backups and traffic jam conditions (Table I-2).

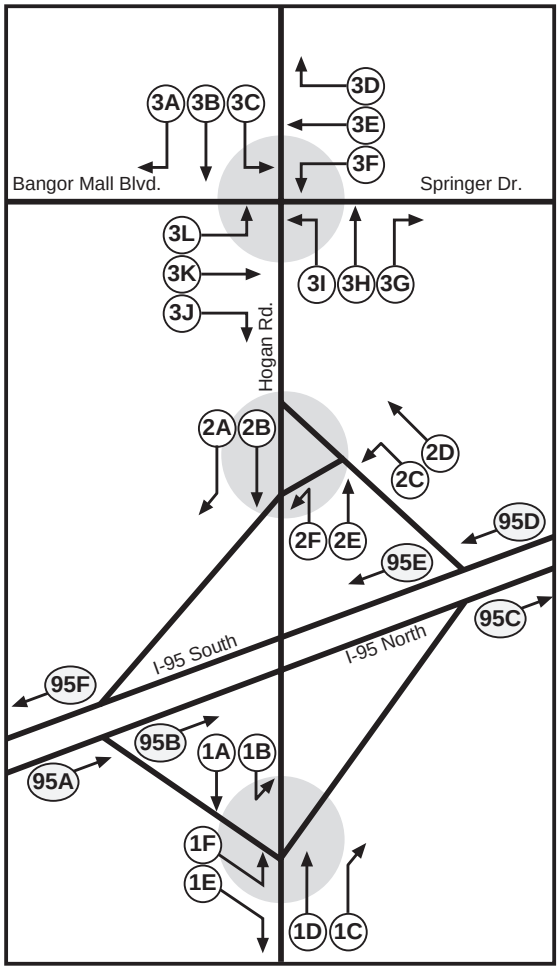


Figure I-3, No-build design hour traffic volumes

Movement	2005	2025
Intersection 3 — Hogan Road and Bangor Mall Road / Springer Drive		
3A	35	44
3B	1,268	2,276
3C	434	454
3D	426	435
3E	172	130
3F	547	580
3G	649	681
3H	1,351	2,358
3I	810	1,007
3J	689	816
3K	173	123
3L	92	88
Intersection 2 — Hogan Rd. and the I-95 Northbound Ramps		
2A	1,209	1,579
2B	1,295	2,093
2C	141	232
2D	414	542
2E	2,396	3,504
2F	362	609
Intersection 1 — Hogan Rd. and the I-95 Southbound Ramps		
1A	1,047	1,818
1B	389	507
1C	191	286
1D	1,385	2,324
1E	290	563
1F	1,373	1,789
Interstate 95		
95A	2,682	3,565
95B	1,019	1,213
95C	1,599	2,006
95D	1,731	2,174
95E	1,176	1,400
95F	2,747	3,588

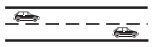
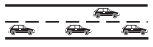
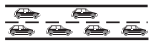
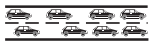
The quality of traffic flow was measured through capacity analyses of the I-95/ Hogan Road interchange intersections. The three critical intersections operate overall at LOS C under existing conditions; LOS D is usually considered the acceptable boundary of traffic operations during peak travel demand periods.

Under future 2005 no-build conditions, the intersection of Hogan Road with the I-95 northbound ramps is projected to operate at LOS E. The intersections of Hogan Road with the I-95 southbound ramps, and Bangor Mall Boulevard/Springer Drive are expected to operate at LOS C conditions. Under future 2025, no-build design hour volume conditions, all three of the critical intersections studied are projected to operate at LOS F conditions.

C. Objectives of the Proposed Action

The objective of the proposed action is to provide a solution for alleviating traffic congestion at the I-95/Hogan Road interchange area, which results in a reasonable expenditure of public funds and minimizes adverse environmental impacts.

Table I-2, Level of Service Designations for Intersections with Traffic Signals

Level of Service	Traffic Flow Condition	Delay (sec.)
A 	**Free Flow Operations** Traffic progression is extremely favorable. Most vehicles arrive during the green phase. Short cycle lengths contribute to low delay.	0 to 5.0
B 	**Reasonably Free Flow Operations** Good traffic progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	5.1 to 15.0
C 	**Stable Operations** Fair traffic progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, but many can still pass through the intersection without stopping.	15.1 to 25.0
D 	**Bordering on Unstable Flow** The influence of congestion becomes more noticeable. Longer delays due to from some combination of unfavorable progression, long cycle lengths, or high volume to capacity (V/C) ratios. Many vehicles stop, and the number of vehicles not stopping declines. Individual cycle failures are noticeable.	25.1 to 40.0
E 	**Extremely Unstable Operations** The limit of acceptable delay in heavily traveled roads and dense commercialized areas. These high delay values indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent.	40.1 to 60.0
F 	**Forced or Breakdown Flow** Considered to be unacceptable to most drivers. This condition often occurs with over-saturation (i.e., when arrival flow rates exceed the capacity of the intersection). It may also occur at high V/C ratios with many individual cycle failures.	> 60.0

D. Scope of This Environmental Analysis

This analysis entailed detailed study of the project and its impacts to the social, natural, and atmospheric environment in the study area and surrounding region. The environmental consequences associated with the construction and operation of the Preferred Alternative were examined. The project, as proposed, would impact approximately 0.20 ha (0.50 ac.) of wetlands. A Tier II Natural Resource Protection Act permit application will be prepared and submitted for review and approval; the permit application will include a plan to mitigate the unavoidable impact to wetlands.

E. The Decision That Must Be Made

The purpose of this environmental assessment (EA) is to provide the Federal Highway Administration (FHWA) and the MDOT with a full accounting of the effects of the alternatives developed for meeting the project Purpose and Needs. It is the result of a process established by the National Environmental Policy Act (NEPA). The NEPA process is intended to help public officials make decisions based on an understanding of the environmental consequences and take actions that protect, restore, and enhance the environment (40 CFR 1500.1).

An EA must briefly discuss the Purpose and Need for the proposed action, the range of alternatives considered, the resultant environmental impacts from the proposed action, and the agencies and persons consulted during the planning of the proposed action (40 CFR 1508.9b). The EA must provide sufficient information for the project sponsor, the FHWA, to determine whether or not the project, as proposed, would result in a significant impact to the environment. If the project would result in a significant impact to the environment, an *environmental impact statement* (EIS) would be prepared. If no significant impact to the environment is anticipated,

a *Finding of No Significant Impact* (FONSI) is prepared. A FONSI is a public document that briefly describes why an action will not require the preparation of an EIS. The selection of a Preferred Alternative and the FONSI are based upon the contents of the EA.

F. Applicable Regulations and Required Coordination

The following laws and regulations apply to the proposed action and have been considered during the preparation of this EA.

Executive Order 11988. Floodplain Management. 42 FR 26951. Signed May 24, 1977.

Executive Order 11990. Protection of Wetlands. 42 FR 26961. Signed May 24, 1977.

Executive Order 12898. Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. 59 FR 7629. Signed February 11, 1994.

Federal Register. Environmental Impact and Related Procedures; Final Rule. 23 CFR Parts 635, 640, 650, 712, 771, and 790 & 40 CFR Part 622. August 28, 1987.

Federal Register. Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act. 40 CFR Parts 1500-1508. November 29, 1978.

Public Law 91-190. The National Environmental Policy Act of 1969. 42 U.S.C. § 4321 et seq. Signed January 1, 1970.

Public Law 95-217. Clean Water Act of 1977. 33 U.S.C. § 1251.